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09/903,476	07/11/2001	Ajit B. Dandekar	2001B074	9333

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EXAMINER

DANG, THUAN D

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 05/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/903,476

Applicant(s)

DANDEKAR ET AL.

Examiner

Thuan D. Dang

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 13-23 and 25-37 is/are pending in the application.
- 4a) Of the above claim(s) 13-18, 25, 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) 13-23 and 25-37 is/are allowed.
- 6) ☒ Claim(s) 13-23, 25, 34, 36, 37 is/are rejected.
- 7) ☐ Claim(s)        is/are objected to.
- 8) ☐ Claim(s)        are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on        is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on        is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No.       .
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11.
- 4) ☐ Interview Summary (PTO-413) Paper No(s).
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 27-34 and 37 (the second claim 28 has been changed to 29) are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 27, "increasing mono-selectivity and/or further increasing alkylation activity of said alkylation catalyst" is a new matter since nowhere in the specification support the term "and/or" as recited in the claims.

### *Claim Rejections - 35 USC § 102/103*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 25, ~~27~~29, 32-34, and 37 (the second claim 28 has been changed to 29) are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Chu et al (4,486,616).

Chu discloses a process of alkylation of an aromatic hydrocarbon, such as toluene with an olefin, such as ethylene in the presence of a molecular sieve catalyst which, after a period of use, is regenerated with air and an aqueous medium containing acetic acid (the abstract; col. 10, line 56 thru col. 11, line 25; examples, namely example 4).

The timing, temperature, and the calcination of step c can also be found in example 4 of Chu.

Chu does not disclose the function of each of these two steps of treatments of the catalyst. However, these results are expected to be inherent in the treated Chu catalyst due to the similar catalyst has similar treatment steps.

Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al (4,486,616).

Chu is silent as to using benzene as an aromatic reactant (see the whole for details).

However, benzene is also an aromatic hydrocarbon. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Chu process by alkylating benzene to arrive at the applicants' claimed process since it is expected that any aromatic can be alkylated in the presence of the Chu catalyst. Further, it is also expected that once toluene as an homologous compound of benzene can be alkylated by under the condition of the Chu process, benzene is expected to be alkylated under the same since it has been established that closely relate homologs, analogs and isomers in chemistry may create a prima facie case of obviousness. *In re Dillon* 16 USPQ 2d 1897, 1904 (Fed. Cir. 1990); *In re Payne* 203 USPQ 245 (CCPA 1979); *In re Mills* 126 USPQ 513 (CCPA 1960); *In re Henze* 85 USPQ 261 (CCPA 1950); *In re Haas* 60 USPQ 544 (CCPA 1944).

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Claims ~~19-23~~ 23, 26, 31, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chu et al (4,486,616) alone, alternatively in view of Huss, Jr. et al (5,030,785).

Chu discloses a process as discussed above.

Chu does not disclose that the sieve is MCM-22 as called for in claim 8 (see the whole patent to Chu for details). However, Chu discloses that the sieve should be a zeolite having constraint index of 1 to 12 (the abstract). Further, it is well-known that MCM-22 has a CI of 1.5 (Huss, Jr.: table 5, lines 13-14).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Chu process by using MCM-22 as the sieve for the catalyst since MCM-22 has a CI of 1.5.

Alternatively, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the Chu process by using MCM-22 as disclosed by Huss, Jr. since Huss, Jr. discloses that MCM-22 is particularly preferred to be used as an alkylation catalyst for aromatic hydrocarbons (col. 5, lines 67-68).

#### ***Allowable Subject Matter***

Claims 13-18 and 35 are allowed.

#### ***Response to Arguments***

Applicant's arguments with respect to rejected claims have been considered but are moot in view of the new ground(s) of rejection. Note that the rejection of present claims over Chu et al is a 102/103 rejection.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 703-305-2658. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-5408 for regular communications and 703-305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Thuan D. Dang  
Primary Examiner  
Art Unit 1764

A handwritten signature in black ink, appearing to be 'Thuan D. Dang', written in a cursive style.

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May 18, 2003